

REMARKS

Claims 1-9 are pending in the application. Claims 1-9 are rejected. Claims 1 and 9 are amended. Claim 8 is cancelled. No new matter has been added. All rejections are respectfully traversed.

Claims 1-5 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Abali, et al. (U.S. Patent 6,317,114 -Abali).

Regarding independent claim 1, the invention is a display device that compensates for shaking and vibration of the display device. First and second accelerometers are coupled to the display screen. First and second compensation circuits convert acceleration in horizontal and vertical directions respectively to x- and y-compensation signals. Each compensation circuit includes a gain control circuit. Adders combine the x- and y-compensation signals with the horizontal and vertical display signals to dynamically adjust a location of an image on the display screen while the display device is subject to movement.

Dependent claims 2-5 recite further limitations including wherein the display screen is a CRT, wherein the display signals are deflection signals for the cathode ray tube, wherein the display screen is digital, and wherein the display signals are address signals for a frame buffer of the digital screen.

Abali does not describe, teach or show a gain control circuit anywhere in his compensation circuit, or anywhere at all. The Applicants request the Examiner provide a specific reference in Abali, citing column and line, where gain control is described as claimed in claim 1. Otherwise, based on Abali's

compensation circuit alone, Abali cannot anticipate the invention.

Regarding claim 9, the invention is a display device that compensates for shaking and vibration of the display device. First and second accelerometers are coupled to the display screen. First and second compensation circuits convert acceleration in horizontal and vertical directions respectively to x- and y-compensation signals. Adders combine the x- and y-compensation signals with the horizontal and vertical display signals to dynamically adjust a location of an image on the display screen while the display device is subject to movement. A predictive controller anticipates the movement.

Abali never predicts movement of the display device. The predictive controller as claimed **predicts movement** before it happens. The Applicants have reviewed Abali thoroughly, and can not find where predicting future movement of the display device is described. Certainly not a col. 6, lines 20-38. There Abali describes converting an analog signal displacement to a digital signal and describes ways of shifting an image from a digital signal accordingly. Abali requires his accelerometers for each displacement measurement. Once the accelerometers of the present invention have predicted motion, they do not need to be used again, unless the nature of the motion changes. Abali can never predict motion that hasn't occurred. Therefore, based on Abali's displacement measurements alone, Abali can never anticipate the invention.

Claims 6-8 are rejected under 35 U.S.C 103(a) as being unpatentable over Abali in further view of Kerr, et al. (U.S. Patent 4,916,536 - Kerr).

Claimed is each compensation circuit including a first and second integrator to convert acceleration to position and at least one band-pass filter, and a low frequency cut-off of the band pass filter is less than one half cycle per second, and a high frequency cut-off is less than a refresh rate of the display screen.

Abali has no compensation circuit with gain control and a band-pass filter, neither does Kerr, alone or in combination with Abali.

Further, Abali cannot be combined with Kerr. Abali stabilizes an **output** image on a CRT, while Kerr stabilizes an **input** in a camera. Stabilization for camcorders is a well known technique, but that technique can never work for CRTs. Even Abali emphatically states that the art of Kerr cannot be combined with his art, at column 1:

**"It is noted that conventional recording system exist for correcting video camera vibrations. Such a system for a video recording device is cannot [sic] be incorporated in a display device..."**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, if any further comments, questions or suggestions arise in connection with the application. To the extent necessary, a petition for an

extension of time under 37 C.F.R. § 1.136 is hereby made.  
Please charge any shortage in fees due in connection with the  
filing of this paper, including extension of time fees, to  
Deposit Account 50-0749 and please credit any excess fees to  
such deposit account.

Respectfully Submitted,  
Mitsubishi Electric  
Research Laboratories, Inc.

  
Andrew J. Curtin  
Registration No. 48,485

201 Broadway, 8<sup>th</sup> Floor  
Cambridge, MA 02139  
Telephone: (617) 621-7573  
Facsimile: (617) 621-7550